

Fig.1

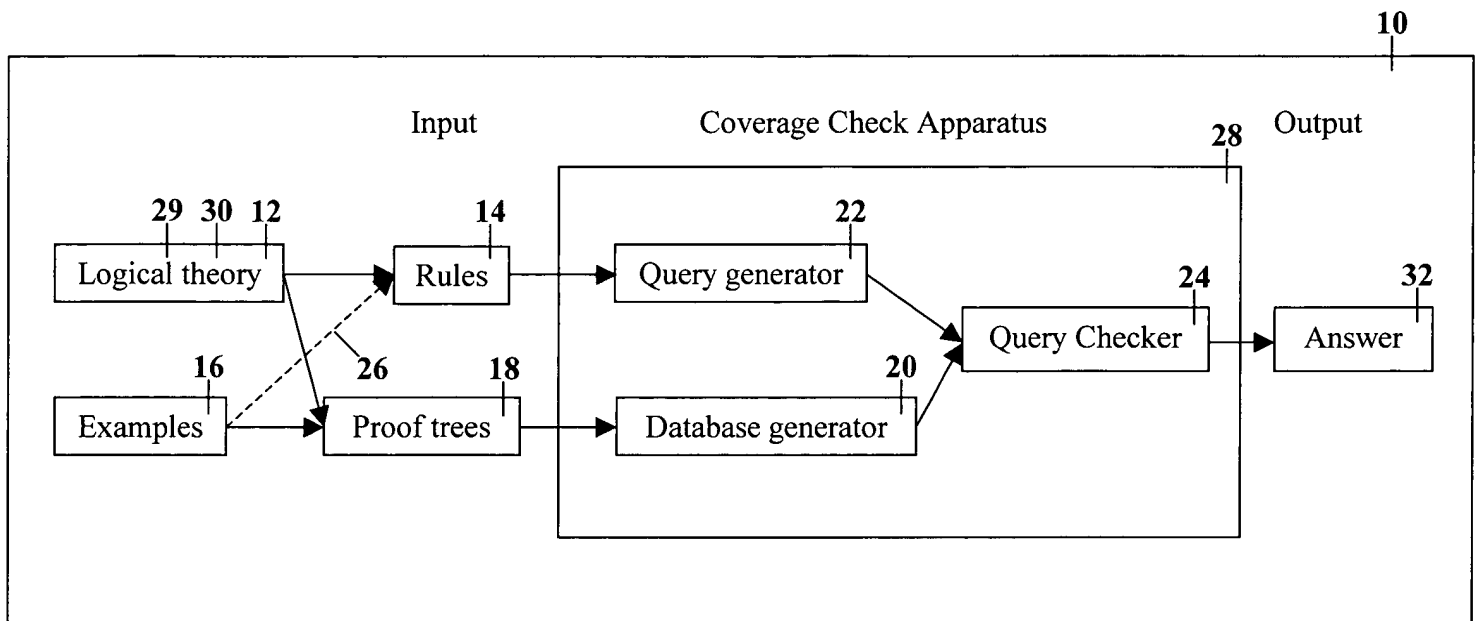


Fig.2

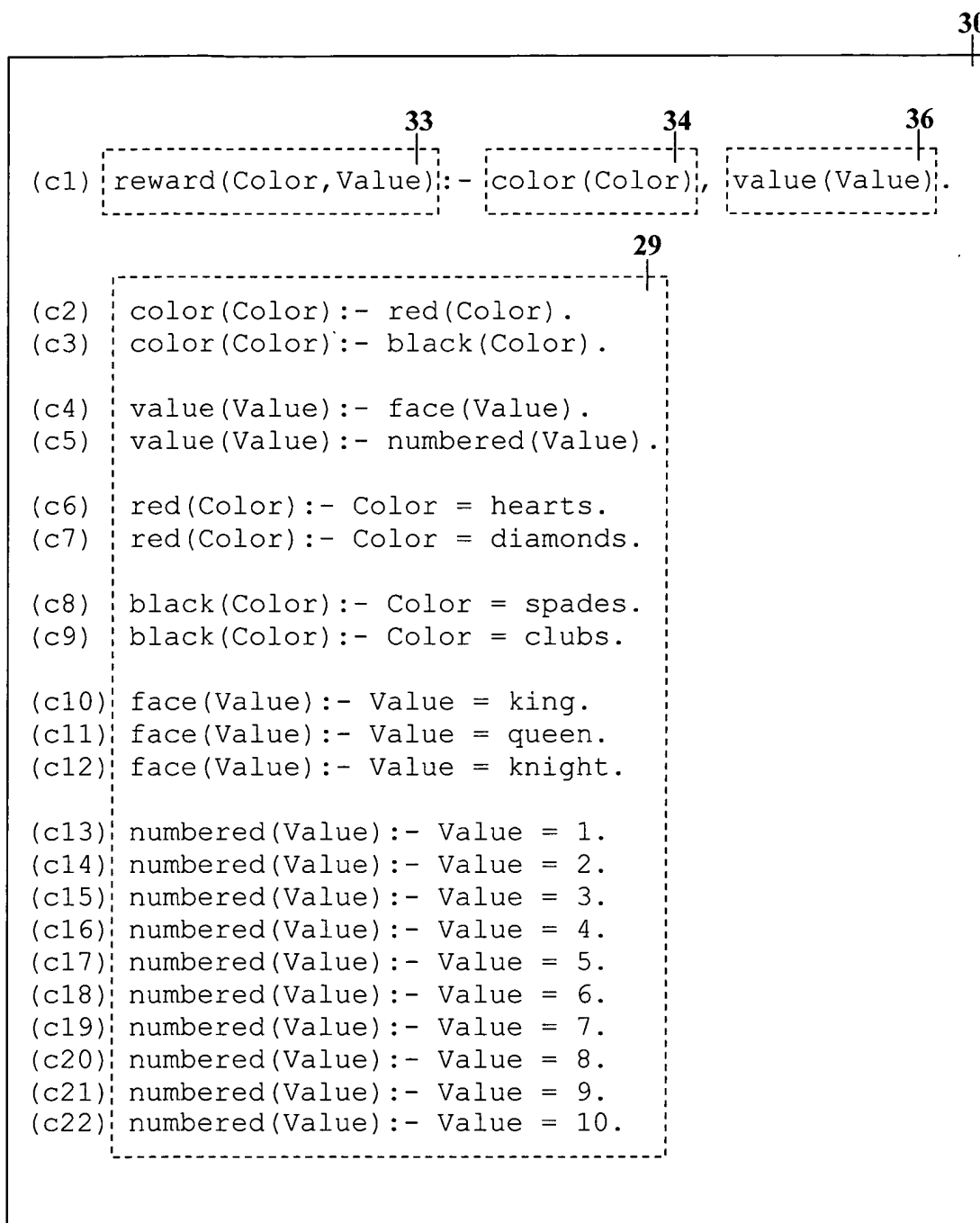


Fig.3

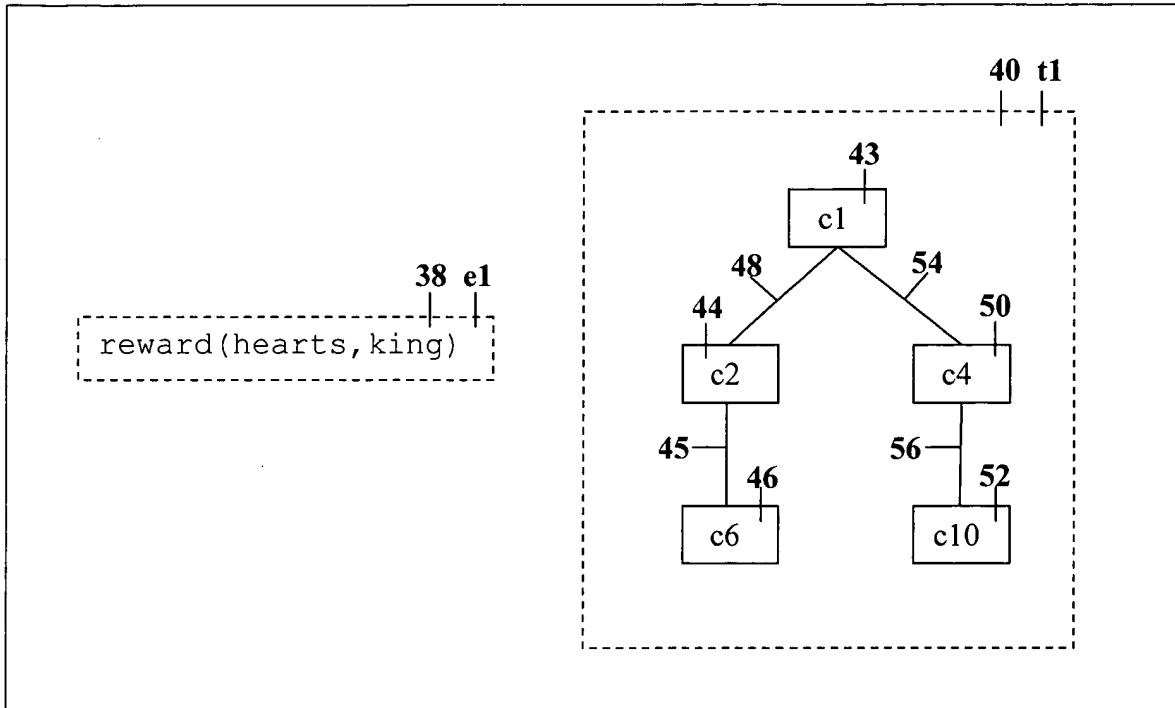


Fig.4

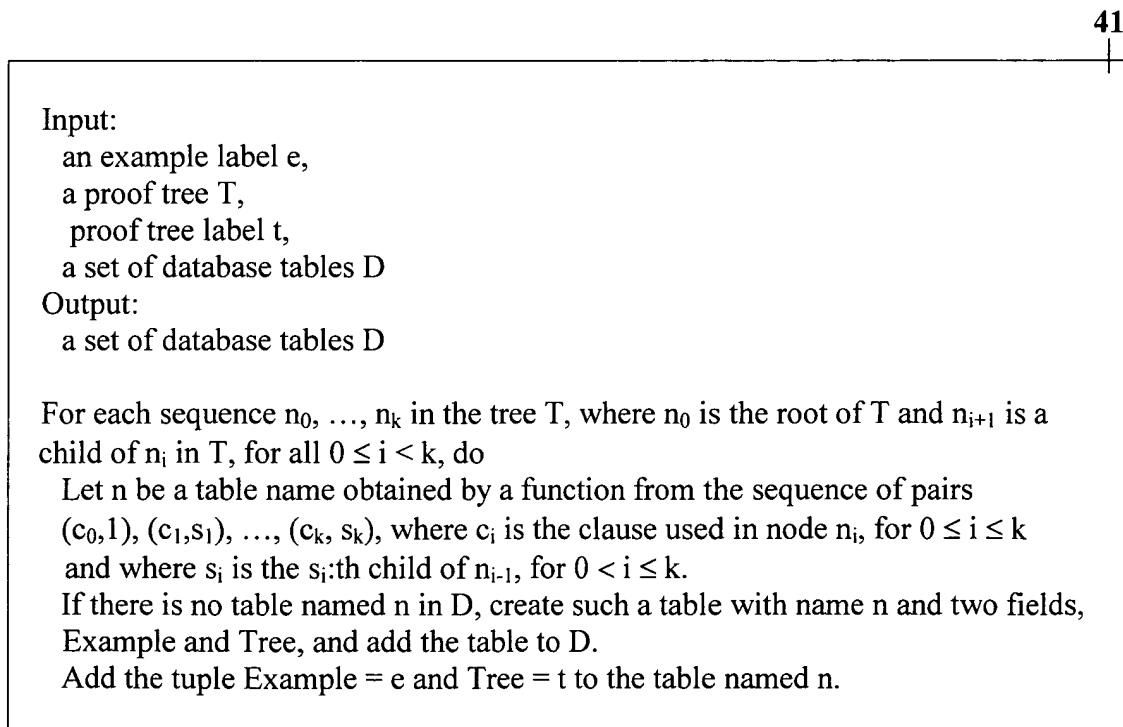


Fig.5

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Table c1

42a

Example	Tree
e1	t1

Table c1_1_c2

42b

Example	Tree
e1	t1

Table c1_1_c2_1_c6

42c

Example	Tree
e1	t1

Table c1_2_c4

42d

Example	Tree
e1	t1

Table c1_2_c4_1_c10

42e

Example	Tree
e1	t1

Fig.6

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```
(r1) reward(Color,Value):- red(Color), face(Value).
```

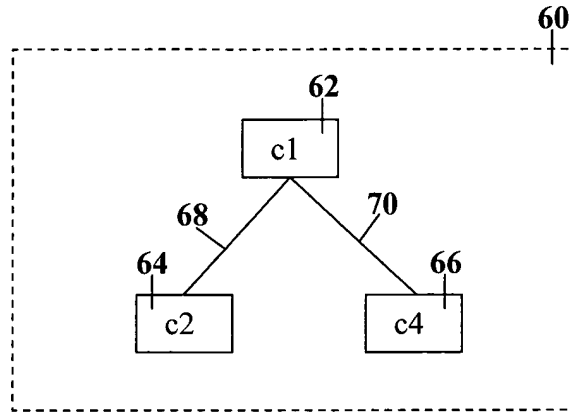


Fig. 7

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Input:

a partial proof tree T,
an example label e,

Output:

a database query Q

Let D be the empty set

Let C be an empty conjunction

For each sequence n_0, \dots, n_k in the partial proof tree T, where n_0 is the root of T and n_{i+1} is a child of n_i in T, for all $0 \leq i < k$, do

Let n be a table name obtained by a function from the sequence of pairs $(c_0, 1), (c_1, s_1), \dots, (c_k, s_k)$, where c_i is the clause used in node n_i , for $0 \leq i \leq k$ and where s_i is the s_i th child of n_{i-1} , for $0 < i \leq k$.

Add n to D

Add the conjunct $n.Example = e$ to CLet $C' = C$

For each conjunct $n_i.Example = e$ in $C = (n_0.Example = e) \text{ AND } \dots \text{ AND } (n_m.Example = e)$, where $i < m$, do

Add the conjunct $n_i.Tree = n_{i+1}.Tree$ to C' Let $Q = \text{'SELECT * FROM' + D + 'WHERE' + C'}$

Fig. 8

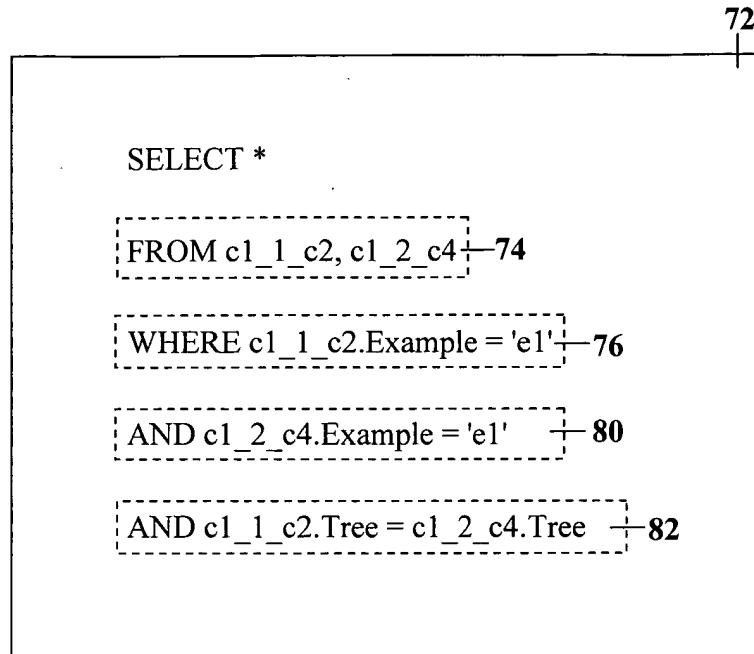


Fig.9

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Table c1 78a

Example
e1

Table c1_1_c2 78b

Example
e1

Table c1_1_c2_1_c6 78c

Example
e1

Table c1_2_c4 78d

Example
e1

Table c1_2_c4_1_c10 78e

Example
e1

Fig. 10

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```
SELECT *  
FROM c1_1_c2, c1_2_c4  
WHERE c1_1_c2.Example = 'e1'  
AND c1_2_c4.Example = 'e1'
```

Fig. 11

86

```
(s1) reward(Weight, Length):-  
    split_number(Weight),  
    split_number(Length).
```

85
87
89

Fig. 12

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```
(r2) reward(Weight,Length):-  
    Weight > 3,  
    split_number(Weight),  
    Length =< 8.2,  
    split_number(Length).
```

Fig 13.

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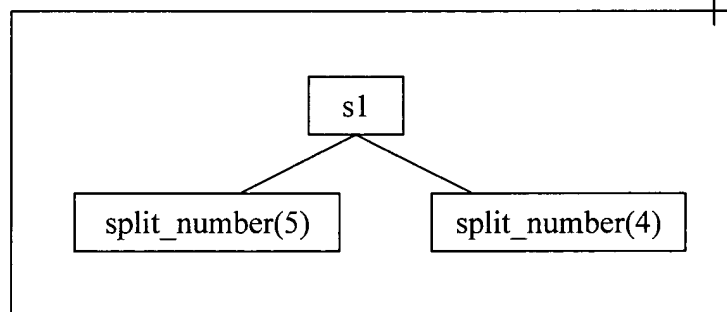


Fig. 14

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Table s1

Example	Tree
e2	t2

Table s1_1

Example	Tree	split_number
e2	t2	5

Table s1_2

Example	Tree	split_number
e2	t2	4

Fig. 15

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```
SELECT *  
FROM s1_1, s1_2  
WHERE s1_1.Example = 'e2'  
AND s1_1.split_number > 3  
AND s1_2.Example = 'e2'  
AND s1_2.split_number <= 8.2  
AND s1_1_c2.Tree = c1_2_c4.Tree
```